

Application No. 10/007,175
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) An image pick-up method for picking up an image of an object with a camera mounted via a pan head on a moving pedestal and for operating together a real object image of the object taken with the camera and another image, said

5 method comprising the steps of:

setting a reference position on a floor surface on which the moving pedestal moves $[[,]]$ and a reference angle of the moving pedestal;

10 detecting a moving amount of the moving pedestal from said reference position and a rotation angle thereof of the moving pedestal from said reference angle;

15 finding a position and an angle of the camera with respect to the object based on the basis of said reference position, said reference angle, said moving amount and said rotation angle of the moving pedestal; and

20 transmitting data of the position and the angle of the camera with respect to the object $[[,]]$ to a computer for creating an image containing a operating together the real object image of the object taken with the camera and said another image based on the position and the angle of the camera with respect to the object.

Application No. 10/007,175
Response to Office Action

Customer No. 01933

2. (Original) The method according to claim 1, wherein said moving amount of the moving pedestal is obtained by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface.

3. (Original) The method according to claim 1, wherein the moving pedestal includes at least three wheels, and said rotation angle is calculated from moving distances of two wheels which are distant in terms of a moving direction.

4. (Currently Amended) The method according to claim 3, wherein said two wheels are selected which are most distant along the moving direction of the wheels of the moving pedestal.

5. (Currently Amended) The method according to claim 1, wherein a first line and a second line are formed provided on the floor surface so that they normally cross with each other from to perpendicularly intersect at said reference position, and

5 wherein two first sensors for detecting the first line and one second sensor for detecting the second line are provided on the moving pedestal, and

wherein said reference position and said reference angle are found based on the basis of said moving amount a position of each
10 of the two first sensors at a time when the two first sensors

Application No. 10/007,175
Response to Office Action

Customer No. 01933

each pass said first line, and ~~said moving amount~~ a position of the second sensor at a time when said second sensor passes the second line.

6. (Currently Amended) An image pick-up system for picking up ~~an~~ a real object image of an object to be operated together with another image, said system comprising:

5 a camera unit ~~having a structure in which~~ comprising a camera for picking up an image of an object, ~~is~~ mounted ~~via a pan head~~ on a moving pedestal via a pan head;

~~an operation~~ calculating means for calculating a positional relationship between the camera and the object;

10 ~~a~~ setting means for setting a reference position on a floor surface on which the moving pedestal moves [[,]] and a reference angle of the moving pedestal and for inputting the reference position and the reference angle to said ~~operation~~ calculating means; and

15 ~~a~~ detection means for detecting a moving amount of the moving pedestal from the reference position, and a rotation angle thereof of the moving pedestal from the reference angle;

20 wherein said ~~operation~~ calculating means calculates ~~out~~ a position and an angle of the camera with respect to the object based on ~~the basis of~~ the reference position, the reference angle, the moving amount and the rotation angle of the moving

Application No. 10/007,175
Response to Office Action

Customer No. 01933

pedestal, and the calculating means transmits data of the position and the angle of the camera with respect to the object [[,]] to a computer for ~~creating an image containing a~~ operating together the real object image of the object taken with the
25 camera and said another image based on the position and the angle of the camera with respect to the object.

7. (Currently Amended) The system according to claim 6, wherein said setting means includes a reference detection mechanism for detecting the reference position ~~on the floor surface on which the moving pedestal moves,~~ and the reference angle ~~of the moving pedestal.~~

8. (Original) The system according to claim 6, wherein said detection means detects the moving amount of the moving pedestal by measuring a length of a portion of a wheel of the moving pedestal, which has been brought into contact with the floor surface.

9. (Currently Amended) The system according to claim 6, wherein the moving pedestal ~~has~~ comprises at least three wheels and said detection means includes at least three encoders each for ~~finding~~ detecting a moving distance of a respective one of the wheels ~~wheel in the movement of the moving pedestal.~~

Application No. 10/007,175
Response to Office Action

Customer No. 01933

10. (Currently Amended) The system according to claim 9, wherein the rotation angle is calculated from the moving distance found detected by the encoders provided corresponding to two of the wheels, which are distant with respect to the moving direction.

11. (Currently Amended) The system according to claim 10, wherein said two wheels ~~are selected which~~ are most distant along the moving direction of the wheels of the moving pedestal.

12. (Currently Amended) The system according to claim 9, wherein ~~rollers are provided as being brought into the moving pedestal further comprises a roller in contact with each of the wheels , respectively, to be rotated along with the rotation of~~
5 together with the wheels wheel, and

wherein the moving distance of each of the wheels is found from detected based on the number of ~~rotation~~ rotations of the respective roller and a pulse number counted by ~~said the~~ respective encoder.

13. (Currently Amended) An image pick-up system for picking up ~~an~~ a real object image of an object to be operated together with another image, comprising:

Application No. 10/007,175
Response to Office Action

Customer No. 01933

a moving pedestal including three wheels;

5 a camera unit ~~having a structure in which~~ comprising a camera for picking up ~~an~~ the real object image of ~~an~~ the object, which is mounted via a pan head on said moving pedestal;

~~an operation~~ calculating means for calculating a positional relationship between the camera and the object;

10 three encoders provided respectively for corresponding to said three wheels of said moving pedestal;

a plurality of sensors provided on said moving pedestal [[,]] for detecting a predetermined mark ~~made~~ on a floor surface on which said moving pedestal moves; and

15 a setting means for setting a reference position on the floor surface [[,]] and a reference angle of said moving pedestal, which are ~~found from~~ determined based on detection values of said plurality of sensors and ~~a~~ pulse numbers counted by said encoders ~~in the~~ during movement of said moving pedestal,
20 and for inputting the reference position and the reference angle to said operation means;

detection means for detecting, based on the pulse numbers counted by said encoders, a moving amount of the moving pedestal from the reference position, and a rotation angle of the moving
25 pedestal from the reference angle;

wherein said operation means calculates ~~out~~ a position and an angle of the camera with respect to the object based on ~~the~~

Application No. 10/007,175
Response to Office Action

Customer No. 01933

~~basis of the reference position, the reference angle, the a~~
moving amount from the reference position and ~~the a~~ rotation
30 ~~angle of said moving pedestal from the reference angle,~~ which are
obtained ~~from~~ based on the pulse numbers counted by said
encoders, and transmits data of the position and the angle of the
camera with respect to the object $[[,]]$ to a computer for
~~creating an image containing a~~ operating together the real object
35 image of the object taken with the camera and said another image
based on the position and the angle of the camera with respect to
the object.